

Panasonic



The illustrations show SC-AK510.

CD Stereo System Operating Instructions

Model No. **SC-AK610**
SC-AK510
SC-AK410
SC-AK403

For U.S.A.

As an ENERGY STAR® Partner, Panasonic has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.



COMPACT
DISC
DIGITAL AUDIO

Before connecting, operating or adjusting this product, please read these instructions completely.
Please keep this manual for future reference.

SC-AK610 and SC-AK403 are available in the U.S.A. only.

Table of contents

Dear customer

Thank you for purchasing this product.

For optimum performance and safety, please read these instructions carefully.

These operating instructions are applicable to the following systems. Unless otherwise indicated, illustrations in these operating instructions are of SC-AK510.

System	SC-AK610	SC-AK510	SC-AK410	SC-AK403
Main unit	SA-AK610	SA-AK510	SA-AK410	SA-AK403
Front speakers	SB-AK610	SB-AK510	SB-AK410	SB-AK410
Subwoofer	SB-WAK610	-	-	-

CAUTION!

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF.
REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

CAUTION:

TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

The model number and serial number of this product can be found on either the back or the bottom of the unit.

Please note them in the space provided below and keep for future reference.

MODEL NUMBER _____

SERIAL NUMBER _____

User memo:

DATE OF PURCHASE _____

DEALER NAME _____

DEALER ADDRESS _____

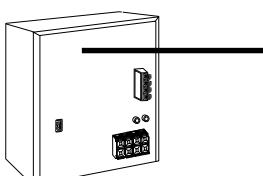
TELEPHONE NUMBER _____

Except for U.S.A.

CAUTION	INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.	(IEC60825-1)
ATTENTION	RADIATION LASER LORSQUE OUVERT. EVITER TOUTE EXPOSITION AU FAISCEAU.	
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING. NÅR SIKKERHEDSFABRYDERE ER UDE AF FUNKTION. UNDGÅ UDSETTELSE FOR STRÅLING.	
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETESSA OLET ALTINA NAKYMATÖNTÄ LASERSÄTEILILLE. ÄLÄ KATSO SÄTEESEN.	
VARNING	OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄREN ÄR URKOPPLAD. BETRAKT LASSTRÅLEN.	
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNDGÅ EKSPOSERING FOR STRÅLEN.	
VORSICHT	UNSICHTBARE LASERSTRÄHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.	RQLX0051

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For SC-AK410 sold in Canada



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	Back cover

CAUTION!

DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.



CAUTION
**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Listening caution



Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion—and, most importantly, without affecting your sensitive hearing.

We recommend you to avoid prolonged exposure to excessive noise.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing.

Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

THE FOLLOWING APPLIES ONLY IN THE U.S.A.:

CAUTION:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any unauthorized changes or modifications to this equipment would void the user's authority to operate this device.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Product Service

1. **Damage requiring service**—The unit should be serviced by qualified service personnel if:
 - (a) The AC power supply cord or AC adaptor has been damaged; or
 - (b) Objects or liquids have gotten into the unit; or
 - (c) The unit has been exposed to rain; or
 - (d) The unit does not operate normally or exhibits a marked change in performance; or
 - (e) The unit has been dropped or the cabinet damaged.
2. **Servicing**—Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.
3. **Replacement parts**—When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other hazards.

4. **Safety check**—After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

Product information

For product information or assistance with product operation:

In the U.S.A., contact the Panasonic Customer Call Center at 1-800-211-7262, or e-mail consumerproducts@panasonic.com, or web site (<http://www.panasonic.com>).

In Canada, contact Panasonic Canada Inc. Customer Care Centre at 905-624-5505, web site (www.panasonic.ca), or an authorized Servicentre closest to you.

Supplied accessories

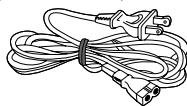


Please check and identify the supplied accessories.
Use numbers indicated in parentheses when asking
for replacement parts.

(Only for U.S.A.)

To order accessories contact 1-800-332-5368 or
web site (<http://www.panasonic.com>).

AC power supply cord .. 1 pc. (RJA0065-1D)



FM indoor antenna .. 1pc. (RSA0006-J)



Remote control transmitter 1 pc.

SC-AK610 **SC-AK510**

(N2QAHB000036)

SC-AK410

For U.S.A.:

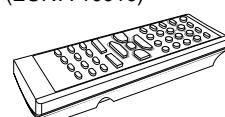
- Black: (EUR7710010)
- Silver: (EUR7710020)

For Canada:

(EUR7710020)

SC-AK403

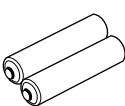
(EUR7710010)



AM loop antenna .. 1 pc. (N1DADYY00002)



Batteries 2 pcs.
R6, AA, UM-3



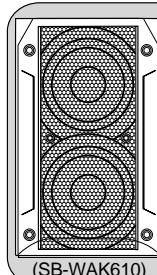
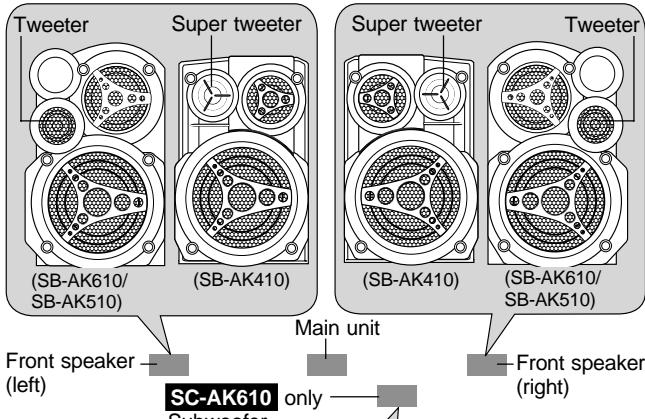
Placement of speakers

SC-AK610 **SC-AK510**

Place the front speakers so that the tweeter is on the outside.

SC-AK410 **SC-AK403**

Place the front speakers so that the super tweeter is on the outside.



Place on the floor or a sturdy shelf so that it won't cause vibration.

If irregular coloring occurs on your television
The subwoofer is designed to be used close to a television, but the picture may be affected with some televisions and set-up combinations.

If this occurs, turn the television off for about 30 minutes.

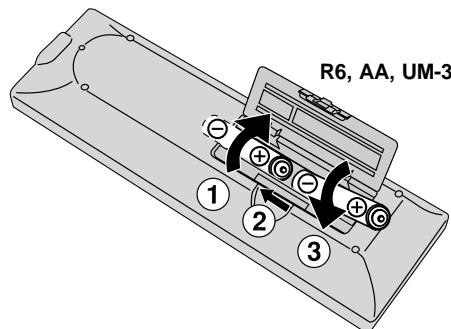
The television's demagnetizing function should correct the problem. If it persists, move the speaker further away from the television.

Note

- Keep your speakers at least 10 mm (1³/₃₂) away from the system for proper ventilation.
- The front speakers do not have magnetic shielding. Do not place them near televisions, personal computers or other devices easily influenced by magnetism.
- You cannot take the front net off the speakers.

The remote control

Batteries



- Insert so the poles (+ and -) match those in the remote control.
- Do not use rechargeable type batteries.

Do not:

- mix old and new batteries.
- use different types at the same time.
- heat or expose to flame.
- take apart or short-circuit.
- attempt to recharge alkaline or manganese batteries.
- use batteries if the covering has been peeled off.
- keep together with metallic objects such as necklaces.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

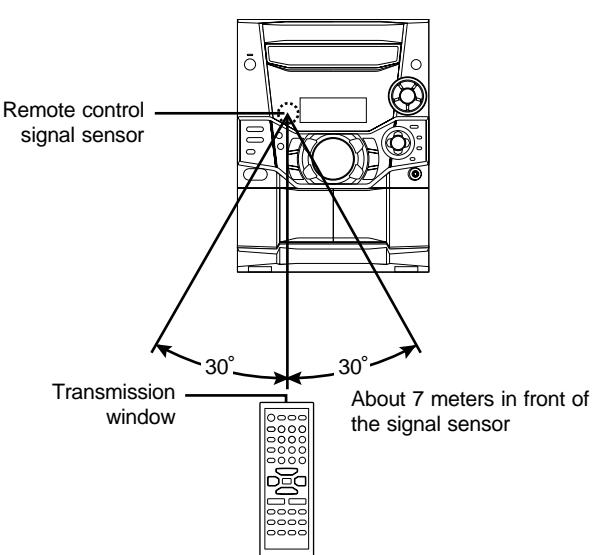
If electrolyte leaks from the batteries, consult your dealer.

Wash thoroughly with water if electrolyte comes in contact with any part of your body.

Remove if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

Replace if the unit does not respond to the remote control even when held close to the front panel.

Use



Aim at the sensor, avoiding obstacles, at a maximum range of 7 meters directly in front of the unit.

- Keep the transmission window and the unit's sensor free from dust.
- Operation can be affected by strong light sources, such as direct sunlight, and the glass doors on cabinets.

Do not:

- put heavy objects on the remote control.
- take the remote control apart.
- spill liquids onto the remote control.

Set-up

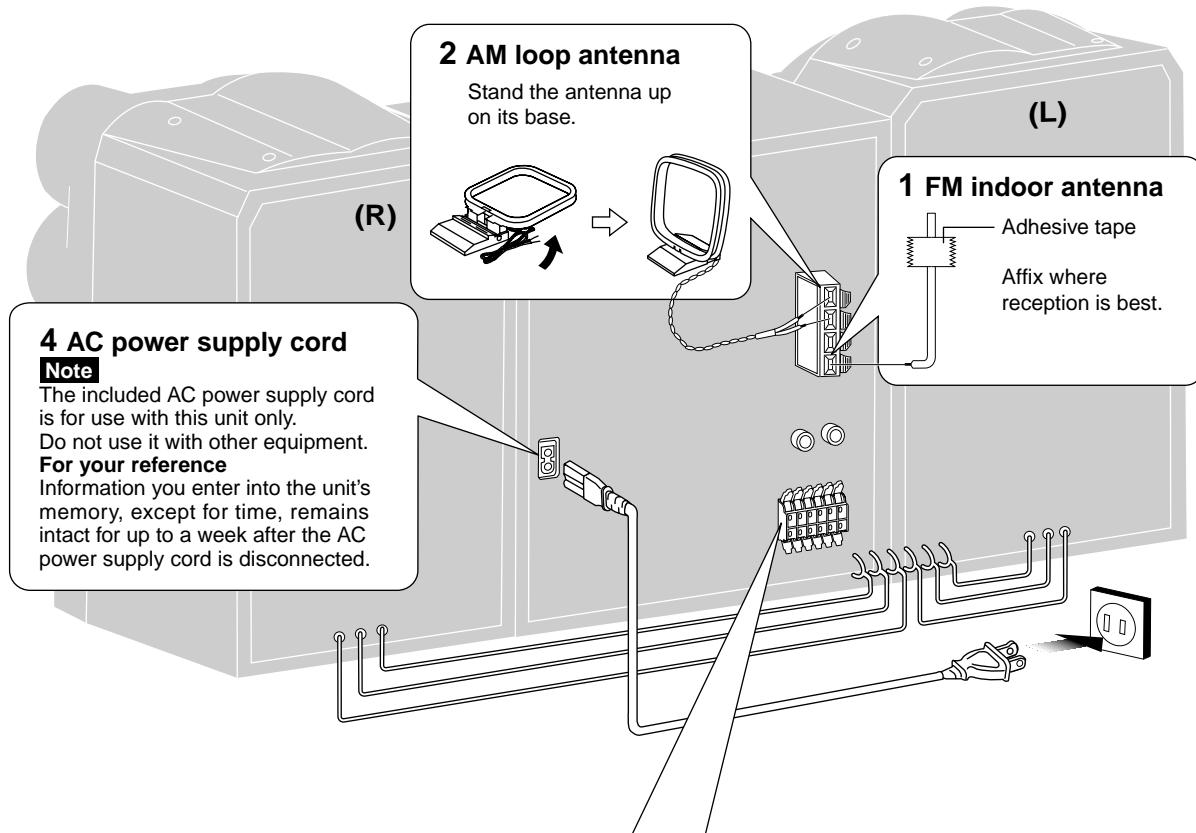
Connect the AC power supply cord only after all other connections have been made.

Preparation

Twist and pull off the vinyl tip of the antenna wires and speaker cords.

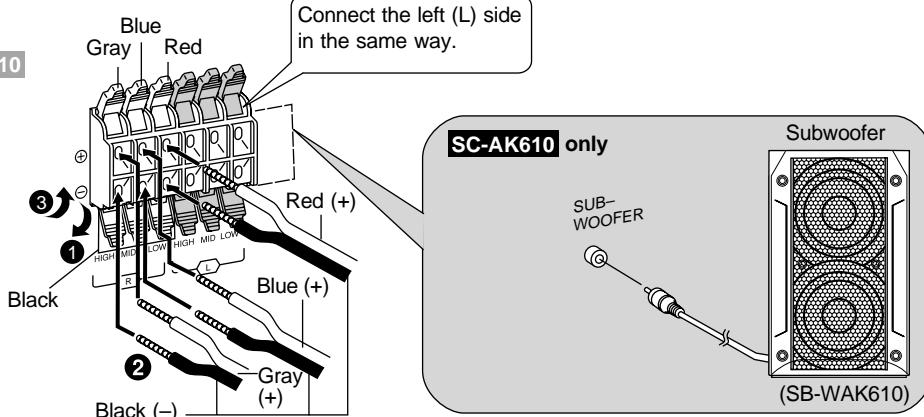


The illustration shows SC-AK510.

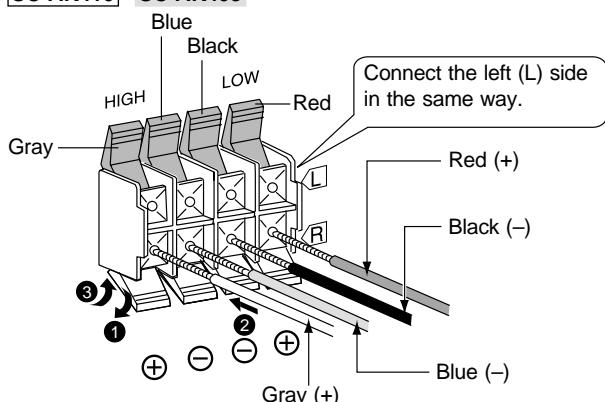


3 Speaker cords

SC-AK610 | SC-AK510

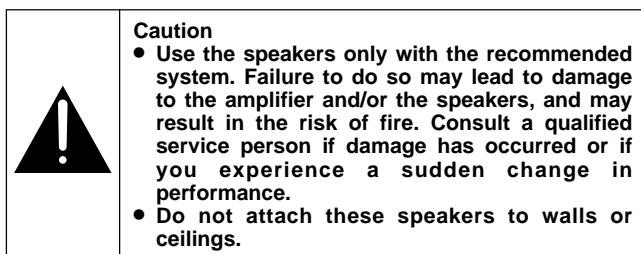


SC-AK410 | SC-AK403



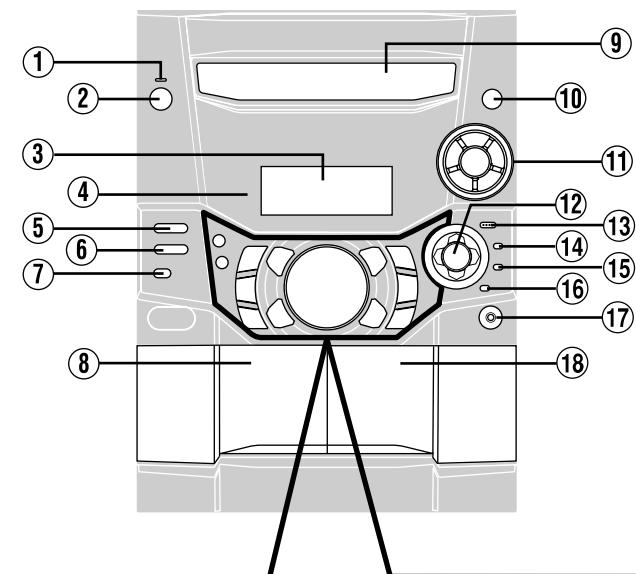
Use only the supplied speakers.

The combination of the main unit and speakers provide the best sound. Using other speakers can damage the unit and sound quality will be negatively affected.

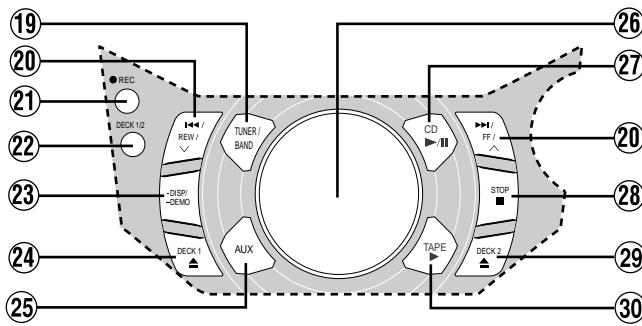


Front panel controls

Main unit



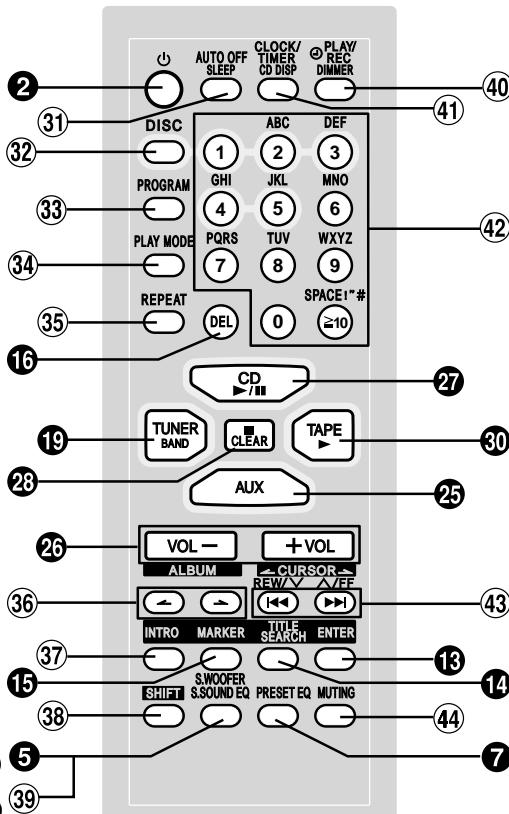
- ① AC supply indicator (AC IN)**
This indicator lights when the unit is connected to the AC power supply.
- ② Standby/on switch (Ø/I, POWER)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- ③ Display**
- ④ Remote control signal sensor** 4
- ⑤ Super sound EQ button (SUPER SOUND EQ)** 14
- ⑥ SC-AK610 only**
⑦ Subwoofer button (SUBWOOFER) 14
- SC-AK510 only**
⑧ Super woofer button (SUPER WOOFER) 14
- ⑨ Preset EQ select button (PRESET EQ)** 14
- ⑩ Deck 1 cassette holder** 14
- ⑪ Disc tray**
- ⑫ CD tray open/close button (▲, OPEN/CLOSE)** 8
- ⑬ CD direct play buttons (1 ~ 5)** 8
- ⑭ Joystick** 11, 12
- ⑮ Enter button (ENTER)** 11, 12
- ⑯ Title search mode select button (TITLE SEARCH)** 12
- ⑰ Marker memory/recall button (MARKER, -MÉMOIRE, -RECALL)** 13
- ⑱ Delete button (DELETE)** 9, 11, 13
- ⑲ Headphones jack (PHONES)** 15
- ⑳ Deck 2 cassette holder** 14



Center console

- ⑲ Tuner/band select button (TUNER/BAND)** 7
- ⑳ CD skip/search, tape fast-forward/rewind, tune/preset channel select, time adjust buttons (I◀◀/REW/V, ▶▶I/FF/▲)** 7-9, 11, 14, 16, 17
- ㉑ Record button (● REC)** 14
- ㉒ Deck select button (DECK 1/2)** 14
- ㉓ Display, demonstration button (-DISP/-DEMO)** 16
- ㉔ Deck 1 open button (▲, DECK 1)** 14
- ㉕ AUX button (AUX)** 15
- ㉖ Volume control (VOLUME DOWN, UP)** 16
- ㉗ CD play/pause button (▶/II, CD)** 8
- ㉘ Stop/program clear button (■, STOP)** 8, 9, 11, 14
- ㉙ Deck 2 open button (▲, DECK 2)** 14
- ㉚ Tape play button (▶, TAPE)** 14

Remote control



Buttons such as ② function in exactly the same way as the buttons on the main unit.

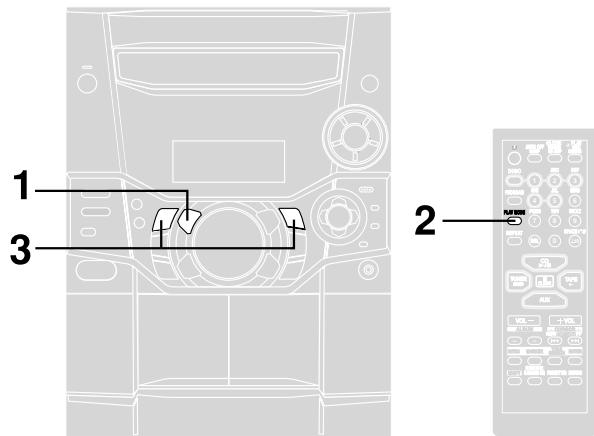
- ㉛ Sleep timer + Auto off button (SLEEP, AUTO OFF)** 16, 17
- ㉜ Disc button (DISC)** 9
- ㉝ Program button (PROGRAM)** 9, 11
- ㉞ Play mode select button (PLAY MODE)** 7, 9, 10, 14, 15
- Use this for selecting CD play mode, tune mode, FM mode and AM beat proof.
- ㉟ Repeat button (REPEAT)** 9
- ㉟ Album skip buttons (◀, ▶, ALBUM)** 10
- ㉟ Intro button (INTRO)** 11
- ㉟ Shift button (SHIFT)**

To use functions labeled in orange *:
While pressing [SHIFT], press the corresponding button.

- * **SC-AK610** **SC-AK510** : For buttons [AUTO OFF], [CLOCK/TIMER], [ØPLAY/REC] and [S.WOOFER]
- SC-AK410** **SC-AK403** : For buttons [AUTO OFF], [CLOCK/TIMER] and [ØPLAY/REC]

- ㉟ SC-AK610**
㉟ Super sound EQ + Subwoofer button (S.SOUND EQ, S.WOOFER) 14
- ㉟ SC-AK510**
㉟ Super sound EQ + Super woofer button (S.SOUND EQ, S.WOOFER) 14
- ㉟ Dimmer + Play timer/record timer button (DIMMER, ØPLAY/REC)** 16, 17
- ㉟ CD display + Clock/timer button (CD DISP, CLOCK/TIMER)** 8, 13, 16, 17
- ㉟ Numbered, character buttons (≥10, 1-9, 0, A-Z, SPACE!#)** 7, 9-12
- ㉟ CD skip/search, tape fast-forward/rewind, tune/preset channel select, time adjust, cursor buttons (I◀◀, REW/V, ▶▶, CURSOR →, I◀, ▶, FF, CURSOR ←)** 7-9, 11-14, 16, 17
- ㉟ Muting button (MUTING)** 16

The radio: manual tuning



1 Press [TUNER/BAND] to select band.

The unit comes on.

Every time you press the button:
FM ↔ AM

2 Press [PLAY MODE] on the remote control to select "MANUAL".

Every time you press the button:
MANUAL ↔ PRESET

3 Hold down [$\blacktriangleleft\blacksquare$ /REW/V] or [$\triangleright\blacksquare$ /FF/▲] for a moment to search for a station.

The frequency stops when it finds a clear station.

To stop during the process, press [$\blacktriangleleft\blacksquare$ /REW/V] or [$\triangleright\blacksquare$ /FF/▲]. Under excessive interference, a station may not be found.

Press [$\blacktriangleleft\blacksquare$ /REW/V] or [$\triangleright\blacksquare$ /FF/▲] repeatedly to tune step-by-step.

"TUNED" is displayed when a radio station is tuned.

"ST" is displayed when a stereo FM broadcast is being received.

If noise is excessive in FM

Remote control only

Hold down [PLAY MODE] to display "MONO".

Monaural sound is selected and noise reduces when reception is weak.

Hold down [PLAY MODE] again to cancel the mode.

"MONO" is also cancelled if the frequency is changed.

To receive FM broadcasts allocated in 0.1 MHz steps

Main unit only

Hold down [TUNER/BAND]. The display changes in a few seconds to show the current minimum FM frequency. Continue to hold down the button until the minimum frequency changes. The step is changed. Repeat the above to change the step back.

Note

- After changing the "allocation" setting, the frequencies you previously preset in the memory will be cleared.
- Sound is momentarily interrupted if you load/unload tapes while listening to an AM broadcast.

The radio: preset tuning

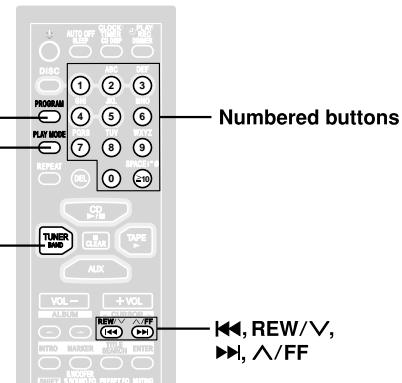
Remote control only

There are two methods of pre-setting stations.

Automatic presetting : All the stations the tuner can receive are preset.

Manual presetting : You can select the stations to preset and the order they are preset in.

Up to 15 stations each can be set in the FM and AM bands.



Preparation:

Press [TUNER BAND] to select "FM" or "AM".

Automatic presetting

Do the following once each for FM and AM.

Preparation: Tune to the frequency where pre-setting is to begin.

Hold down [PROGRAM] until the frequency changes.

The tuner presets all the stations it can receive into the channels in ascending order. When finished, the last station memorized is tuned in.



Manual presetting

Pre-set the stations one at a time.

- Press [PROGRAM] then press [$\blacktriangleleft\blacksquare$, REW/V] or [$\triangleright\blacksquare$, FF/▲] to tune to the desired station.
- Press [PROGRAM] then press [$\blacktriangleleft\blacksquare$, REW/V] or [$\triangleright\blacksquare$, FF/▲] to select a channel.
- Press [PROGRAM].

The station occupying a channel is erased if another station is preset in that channel.

Selecting channels

Press the numbered buttons to select the channel.

To enter channel 10 or over, press [≥ 10], then the two digits.



OR

- Press [PLAY MODE] to select "PRESET".
- Press [$\blacktriangleleft\blacksquare$, REW/V] or [$\triangleright\blacksquare$, FF/▲] to select the channel.

CDs

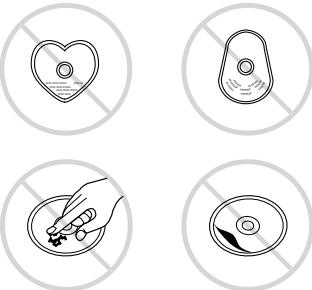
CD selection

Choose CDs with this mark:



Do not:

- use irregularly shaped CDs.
- attach extra labels and stickers.
- use CDs with labels and stickers that are coming off or with adhesive exuding from under labels and stickers.
- attach scratch proof covers or any other kind of accessory.
- write anything on the CD.
- clean CDs with liquids. (Wipe with a soft, dry cloth.)
- use CDs printed with label printers available on the market.



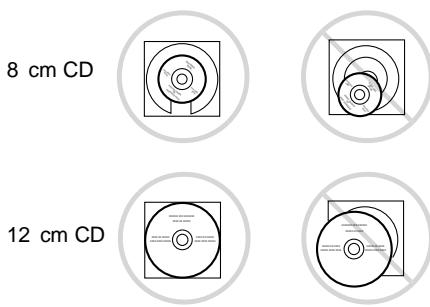
To prevent damage

Always observe the following points:

- Load only 1 CD on the tray.



- Load CDs as shown in the figure.
An adaptor is not needed with 8 cm CDs (singles).

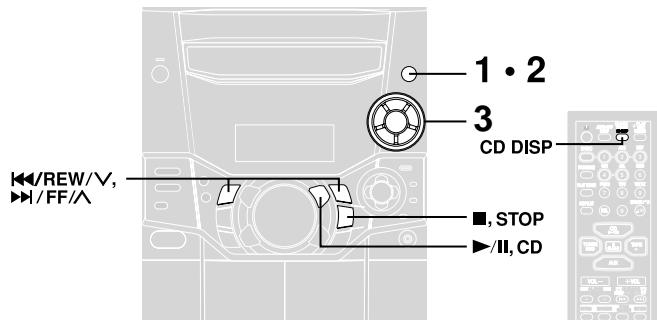


- Set the system on a flat, level surface.
- Always unload all CDs before moving the unit.

Do not:

- set the unit on top of magazines, inclined surfaces, etc.
- move the unit while a tray is opening/closing, or when loaded.
- put anything except a CD in the tray.
- use cleaning CDs or CDs which are badly warped or cracked.
- disconnect the AC power supply cord from the household AC outlet during disc changing operation.

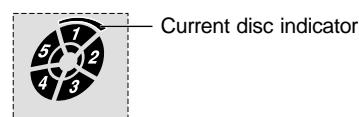
This unit can play WMA (SC-AK610 and SC-AK510 only), MP3 and CD-DA (digital audio) format audio CD-R and CD-RW that have been finalized (a process that enables CD-R/CD-RW players to play audio CD-R and CD-RW) upon completion of recording. It may not be able to play some CD-R or CD-RW due to the condition of the recording.



1 Press [▲, OPEN/CLOSE] to open the tray.
The unit comes on.

2 Set a CD in the tray. (Label must face upward.)
To continue loading CDs in the other trays
Press [1]–[5] to select the required tray and press [▲, OPEN/CLOSE] to open the tray.
Press [▲, OPEN/CLOSE] to close the tray.

3 Press [1]–[5] to play your desired disc.



(Alternatively, you can press [▶/II, CD] if the current disc is your desired CD.)
The track number and its elapsed playing time are shown.

Use the CD Play Mode function's ALL-DISC mode to play CDs in succession. (→ page 9)

To stop the disc play

Press [■, STOP].
The total number of tracks and total playing time are shown.

“▶” indication

It indicates current disc has 16 or more tracks.

One touch play

During standby mode and when a CD is loaded, press [▶/II, CD] or [1] - [5].
The unit comes on and play starts.

To pause	Press [▶/II, CD] during play. Press again to resume play.
To search forward/backward	Hold down [<◀◀/REW/V>] (backward) or [<▶▶/FF/A>] (forward) during play or pause.
To skip forward/backward	Press [<◀◀/REW/V>] (backward) or [<▶▶/FF/A>] (forward) during play or pause.

Note

- During 1-RANDOM or A-RANDOM play (→ page 9), you cannot skip to tracks already played.
- During program play (→ page 9), 1-RANDOM or A-RANDOM play, you can search only within the track.
- Always stop the changer before loading or changing CDs. You cannot change CDs while a disc is playing.

CD display

You can display the remaining play time of the current track.

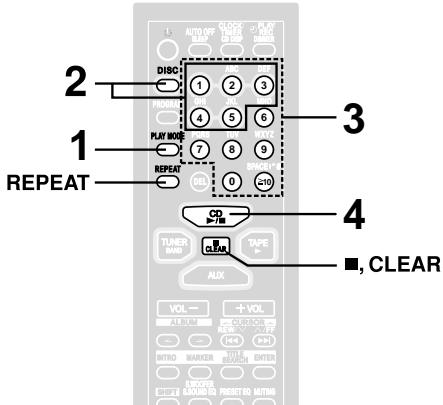
Remote control only

Press [CD DISP] during play or pause.

Every time you press the button:
Elapsed play time ↔ Remaining play time

Note

When track number 25 or greater is playing, remaining play time display shows “— : —”.



Repeat play

Remote control only

Press [REPEAT] during play.
“” is displayed.

To cancel repeat play

Press [REPEAT] to clear “”.

To listen to specific CDs and tracks (CD Play Mode function)

Remote control only

Preparation: Press [**▶/II**, CD] and then [**■, CLEAR**].

1 Press [PLAY MODE] to select the desired mode.

Every time you press the button:

ALL-DISC → 1-SONG → 1-RANDOM → A-RANDOM
 ↑ ↓
 1-DISC

ALL-DISC: Plays **all loaded discs** in succession from the selected disc to the final disc.※.

1-SONG: Plays **one selected track** on the selected disc.

1-RANDOM: Plays **one selected disc** in random order.

A-RANDOM: Plays **all loaded discs** in random order.

1-DISC: Plays **one selected disc**.

(The original display is restored in about 2 seconds.)

Proceed to step 4 when you selected A-RANDOM in step 1.

2 Press [DISC] and (within 10 seconds) [1]–[5] to select the disc.

The CD starts.

3 Only when you selected “1-SONG” in step 1

Select the track with the numbered buttons.

To select a track 10 or over, press [≥ 10] then the two digits.
Play starts from the selected track.

4 Only when you selected “A-RANDOM” in step 1

Press [**▶/II**, CD] to start play.

To stop play

Press [**■, CLEAR**].

When playback ends

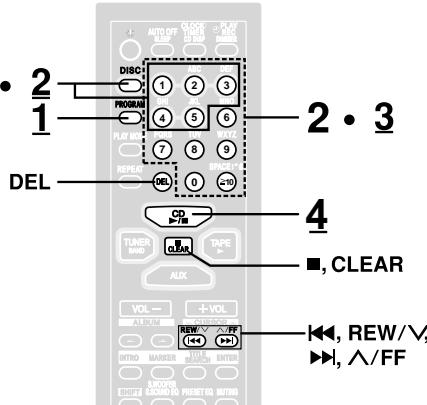
The current play mode will be retained in memory until it is changed even if the unit is turned off.

* Final disc

For example, if play starts from disc 4, disc 3 will be the “final disc”.
Order of progression: Disc 4→5→1→2→3

Note

- You can use repeat mode with CD Play Mode function.
- You cannot use program mode together with CD Play Mode function.



Starting play from a specific track

Remote control only

1 Press [DISC] and (within 10 seconds) [1]–[5] to select the disc.

2 Select the track with the numbered buttons.

To select track 10 or over, press [≥ 10] then the two digits.
Play starts from the selected track.

Note

You cannot use this function with 1-RANDOM or A-RANDOM mode.

Program play

You can program up to 24 tracks.

Remote control only

Preparation: Press [**▶/II**, CD] and then [**■, CLEAR**].

1 Press [PROGRAM].

“PGM” appears.

2 Press [DISC] and (within 10 seconds) [1]–[5] to select the disc.

3 Select the tracks with the numbered buttons.

To select track 10 or over, press [≥ 10] then the two digits.
Repeat steps 2 and 3 to program other tracks.

4 Press [**▶/II**, CD] to start play.

To exit program mode

Press [PROGRAM] in the stop mode. (You can replay your program by pressing [PROGRAM] then [**▶/II**, CD].)

You can do the following while
“P” is displayed

• To check program contents

Press [**◀◀**, REW/V] or [**▶▶**, FF].

Every time you press the button, the track number and program order are displayed.

• To add to the program

Do steps 2 and 3.

• To clear the last track

Press [DEL].

• To clear all tracks

Press [**■, CLEAR**].

“CLEAR ALL?” is displayed.

Within 5 seconds, press the button again to clear all tracks.



Note

- You can use repeat mode with program play.
- You cannot program CD-DA together with MP3/WMA tracks.
(WMA: SC-AK610 and SC-AK510 only)

To mark a track

See page 13.

How discs with MP3/WMA differ from CDs

WMA: SC-AK610 and SC-AK510 only

This unit can play MP3 and WMA files recorded on CD-R/RW with a computer.

Files are treated as tracks and folders are treated as albums.
This unit can access up to 999 tracks, 255 albums and 20 sessions.

When making MP3/WMA files to play on this unit

Disc format

Discs must conform to ISO9660 level 1 or 2 (except for extended formats).

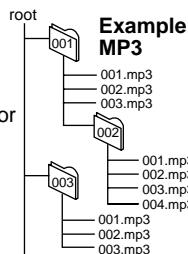
File format

- MP3 files must have the extension ".MP3" or ".mp3".
- WMA files must have the extension ".WMA" or ".wma".

To play in a certain order

Prefix the folder and file names with 3-digits numbers in the order you want to play them.

Files may not be recorded in numbered order if the prefixes have different numbers of digits. For example: 1????.mp3, 2????.mp3, 10????.mp3. However, some writing software may also cause recording to occur in a different order.



MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.



WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

Note

- When creating a WMA disc, ensure the copyright feature is off.
- Noise may occur when playing WMA files.

Limitations on MP3/WMA play

- This unit is not compatible with packet-write format.
- When both MP3/WMA and CD-DA data is recorded on the disc over a number of sessions:
 - If the first session contains MP3/WMA recordings, the unit will play from the MP3/WMA made in that session till the session before the first CD-DA recordings.
 - If the first session contains CD-DA recordings, the unit will play only the recordings made in that session. The subsequent sessions will be ignored.
- You cannot use 1-Disc Random play, All-Disc Random play and search function.
- Some MP3/WMA may not be played due to the condition of the disc or recording.
- Recordings will not necessarily be played in the order you recorded them.

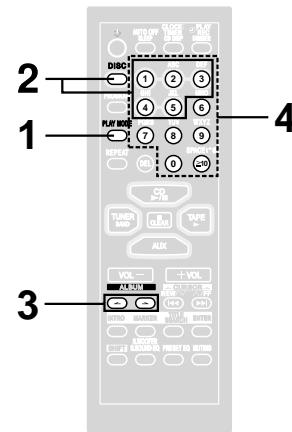
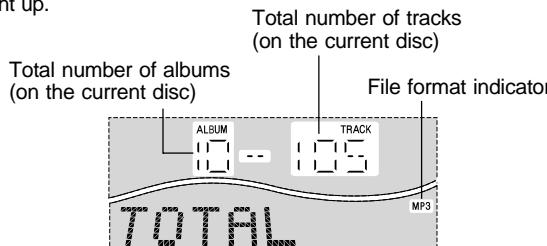
■ Display when in the stop mode (example)

File format indicator

"MP3": Indicates the disc contains MP3 files

"WMA": Indicates the disc contains WMA files

If the disc contains both MP3 and WMA files, both "MP3" and "WMA" will light up.



CD Play Mode function for MP3/WMA

Remote control only

Preparation: Press [▶/II, CD] and then [■, CLEAR].

1 Press [PLAY MODE] to select the desired mode.

Every time you press the button:

ALL-DISC → 1-SONG → 1-ALBUM



ALL-DISC: Plays all loaded discs in succession from the selected disc to the final disc. *

1-SONG: Plays one selected track on the selected disc.

1-ALBUM: Plays one selected album on the selected disc.

1-DISC: Plays one selected disc.

(The original display is restored in about 2 seconds.)

2 Press [DISC] and (within 10 seconds) [1]–[5] to select the disc.

The CD starts.

3 When you selected "1-ALBUM" or "1-SONG" in step 1 Press [ALBUM (← or →)] to select the album.

Play starts from the first track of the selected album.

4 When you selected "1-SONG" in step 1 Press the numbered buttons to select the track in the current album.

To select track 10 or over, press [≥ 10] once then the two digits.

To select track 100 or over, press [≥ 10] twice then the three digits.

Play starts from the selected track.

To stop play

Press [■, CLEAR].

When playback ends

The current play mode will be retained in memory until it is changed even if the unit is turned off.

* Final disc

For example, if play starts from disc 4, disc 3 will be the "final disc".
Order of progression: Disc 4→5→1→2→3

■ When "NOT MP3/ERROR1" or "NOT MP3/ERROR2" appears on the display

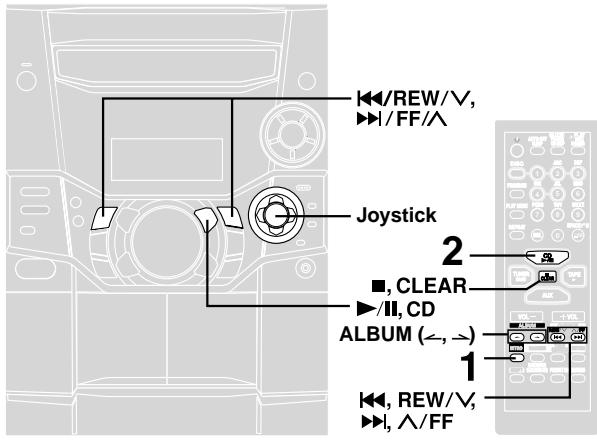
An unsupported MP3 format is being played. The unit will skip that track and play the next one.

■ When "TRACK/PROTECTED" appears on the display

A copyright protected WMA format is being played. The unit will skip that track and play the next one.

Note

- You can use repeat mode (→ page 9) with CD Play Mode function.
- You cannot use program mode together with CD Play Mode function.



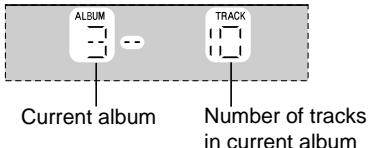
Album skip play

During play or stop

Push the joystick up/down ([ALBUM ↗/CHARA] or [ALBUM ↙/CHARA]) to select the desired album.

Remote control: Press [ALBUM (← or →)].

When selecting in the stop mode:



Press [▶/II, CD] to start play.

Play starts from the first track of the selected album.

To play from another track, refer to "Track skip play" below.

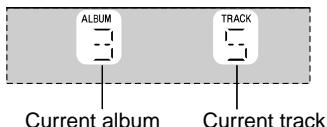
Track skip play

During play or stop

Push the joystick left/right ([◀◀, CURSOR] or [▶▶, CURSOR]) to select a desired track. (You can also press [◀◀/REW/V] or [▶▶/FF/A].)

Remote control: Press [◀◀, REW/V] or [▶▶, FF/A].

When selecting in the stop mode:



Press [▶/II, CD] to start play.

Play starts from the selected track.

To play from another album, refer to "Album skip play" above.

Note

During 1-ALBUM mode, track skipping can only be done within the current album.

INTRO function (Album scan)

You can find an album by listening to the first track of all albums in the current disc for 10 seconds each.

Remote control only

Preparation: Press [▶/II, CD] and then [■, CLEAR].

1 Press [INTRO].

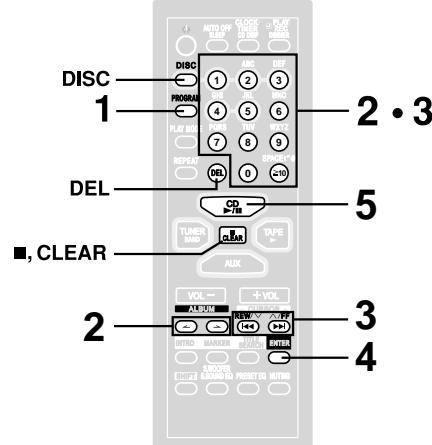
INTRO function starts.

(INTRO function is cancelled after playing the first track in the last album on the current disc.)

2 While your desired album is playing, press [▶/II, CD].

Play continues from the first track of the album.

To stop during the process, press [INTRO] or [■, CLEAR].



Program play for MP3/WMA

You can program up to 24 tracks.

Remote control only

Preparation:

1. Press [DISC] and (within 10 seconds) [1]–[5] to select the disc.
2. Press [■, CLEAR].

1 Press [PROGRAM].

"PGM" appears.

2 Press [ALBUM (← or →)] to select the album.

To select an album directly, press the numbered buttons after pressing [ALBUM (← or →)].

To select album 10 or over, press [≥ 10] once then the two digits.
To select album 100 or over, press [≥ 10] twice then the three digits.

3 Press [◀◀, REW/V] or [▶▶, FF/A] to select the track.

To select a track directly, press the numbered buttons after pressing [◀◀, REW/V] or [▶▶, FF/A].

To select track 10 or over, press [≥ 10] once then the two digits.
To select track 100 or over, press [≥ 10] twice then the three digits.

4 Press [ENTER].

Repeat steps 2~4 to program other tracks.

5 Press [▶/II, CD] to start play.

To exit program mode

Press [PROGRAM] in the stop mode. (You can replay your program by pressing [PROGRAM] then [▶/II, CD].)

You can do the following while "P" is displayed



- To check program contents

Press [◀◀, REW/V] or [▶▶, FF/A].

Every time you press the button, the album number, track number and program order are displayed.

- To add to the program

Do steps 2~4.

- To clear the last track

Press [DEL].

- To clear all tracks

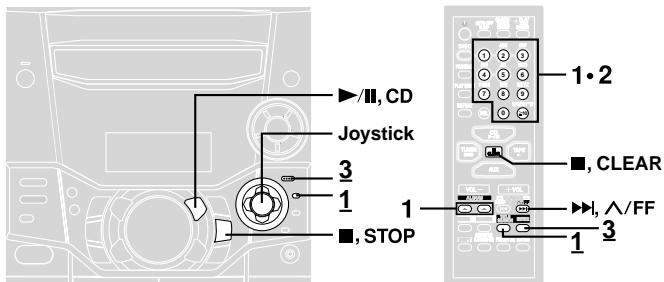
Press [■, CLEAR].

"CLEAR ALL?" is displayed.

Within 5 seconds, press the button again to clear all tracks.

Note

- You can use repeat mode (→ page 9) with program play.
- You cannot program more than one CD for MP3/WMA.
- You cannot program CD-DA together with MP3/WMA tracks.
- The program memory is cleared when you change a disc or open the CD tray.



Starting play from a desired track in a desired album

Remote control only

Preparation: Press [**>/II, CD**] and then [**■, CLEAR**].

- 1 Press [**ALBUM (← or →)**] and then the numbered buttons to select the album.

To select album 10 or over, press [≥ 10] once then the two digits.
To select album 100 or over, press [≥ 10] twice then the three digits.
Play starts from the first track of the selected album.

- 2 Press the numbered buttons to select the track in the current album.

To select track 10 or over, press [≥ 10] once then the two digits.
To select track 100 or over, press [≥ 10] twice then the three digits.
Play starts from the selected track.

Title search function

You can search for your desired album/track with its keyword (part of the title).

Album title search

Preparation: Press [**>/II, CD**] and then [**■, STOP**].

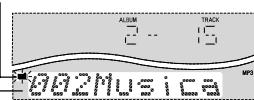
- 1 Press [**TITLE SEARCH**] once.

- 2 Enter the characters of the keyword for the album title. (→ see right) Blinks to indicate album title search mode

- 3 Press [**ENTER**].

Album title search starts.

The matched album title is displayed.



To show the next album title search result, push the joystick right ([**>>I, CURSOR**]). (Remote control: Press [**>>I, ^/FF**].)
When there is no match for the searched keyword, the display shows "NOT FOUND".

Press [>/II, CD**] to start play from the album found.**

Play starts from the first track of the album.

(Title search mode is cancelled.)

Track title search

Preparation: Press [**>/II, CD**] and then [**■, STOP**].

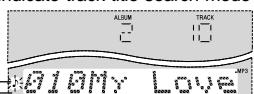
- 1 Press [**TITLE SEARCH**] twice.

- 2 Enter the characters of the keyword for the track title. (→ see right) Blinks to indicate track title search mode

- 3 Press [**ENTER**].

Track title search starts.

The matched track title is displayed.



To show the next track title search result, push the joystick right ([**>>I, CURSOR**]). (Remote control: Press [**>>I, ^/FF**].)

When there is no match for the searched keyword, the display shows "NOT FOUND".

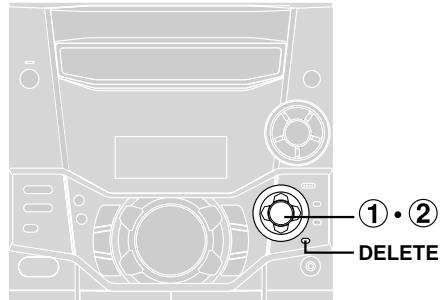
Press [>/II, CD**] to start play from the track found.**

(Title search mode is cancelled.)

Entering characters

You can enter keyword of up to 10 characters for album/track title search. You can only enter upper case letters but the unit also searches for lower case.

On the main unit



- ① Push the joystick up/down ([**ALBUM ↗ /CHARA**] or [**ALBUM ↙ /CHARA**]) to select the required character.
Each time you push the joystick up ([**ALBUM ↗ /CHARA**]), the characters change in the following order.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	0																
space	!"	#	\$	%	&	'	()	*	+	,	-	.	/	:	<	=	>	?	_	`				

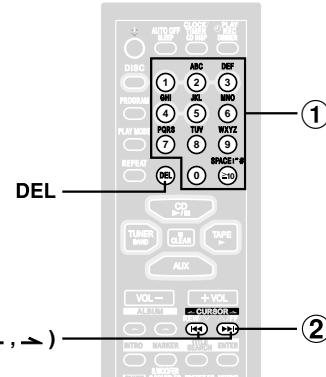
The sequence is reversed if you push the joystick down ([**ALBUM ↘ /CHARA**]).

If you hold the joystick up/down ([**ALBUM ↗ /CHARA**] or [**ALBUM ↘ /CHARA**]), the characters change faster.

- ② Push the joystick right ([**>>I, CURSOR**]) to enter the character.

Repeat steps ①~② to complete the keyword.

On the remote control



- ① Press the numbered button to select the required character.
Characters allocated to the numbered buttons:

Numbered buttons	Characters	Numbered buttons	Characters
1	1	6	M N O 6
2	A B C 2	7	P Q R S 7
3	D E F 3	8	T U V 8
4	G H I 4	9	W X Y Z 9
5	J K L 5	0	0
≥ 10	space !"#\$%&'()*+,-./:;<=>?_`		

The characters change each time a numbered button is pressed.

For example, every time you press [2]:

A → B → C → 2
↑

- ② Press [**CURSOR ↗**] to enter the character.
Repeat steps ①~② to complete the keyword.

For your reference

If you entered a character by mistake, push the joystick left ([◀◀ CURSOR]) (remote control: press [**◀ CURSOR**]) to move back to the mistake, then enter the correct character.

■ Editing keywords

To move the cursor

On the main unit: Push the joystick left/right ([◀◀ CURSOR] or [▶▶ CURSOR]).

On the remote control: Press [CURSOR] (**◀** or **▶**).

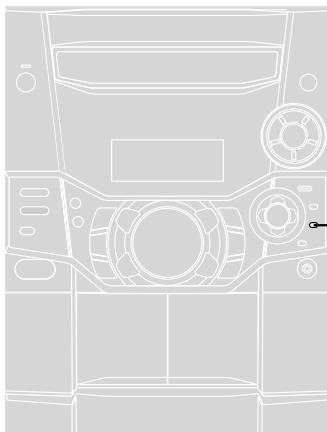
Deleting a character

1. Move the cursor over the character to be deleted.

2. Press [DELETE] (remote control: [DEL]).



CD DISP



2
MARKER,
-MEMORY,
-RECALL



2
MARKER

Marking a track

You can mark one track each on the discs loaded so that you can start play from them later.

To mark a track number

1 During play or stop

Select your desired track.

(For MP3/WMA, refer to "Track skip play" on page 11.

For CD-DA, press the numbered buttons.

To select track 10 or over, press [**≥10**] then the two digits.)

2 Hold down [MARKER, -MEMORY] until "STORING" blinks on the display.

Remote control: Hold down [MARKER].

The selected track is stored in the marker of the current disc.

Note

If a track is already stored in the marker, it will be replaced next time you store a new track in the same marker.

To recall a marked track number in the current disc

During play or stop

Press [MARKER, -RECALL] to recall a marker.

Remote control: Press [MARKER].

Play starts from the track recalled.

Note

- "NO MARKER" indicates that the marker in the current disc is empty.
- The marker memory is cleared when you open the CD tray.
- For CD-DA, you cannot use this function during 1-Disc Random play and All-Disc Random play.
- You cannot use this function during program mode.

CD display for MP3/WMA

Remote control only

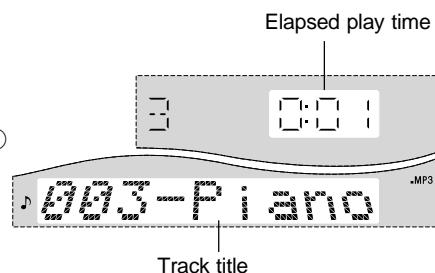
During play or pause

Press [CD DISP] to select a desired CD display mode.

Every time you press the button:

- ① Remaining play time, Original spectrum analyzer display mode
↓
② Elapsed play time, Album title
↓
③ Elapsed play time, Track title
↓
④ Elapsed play time, ID3 album name (MP3 only)
↓
⑤ Elapsed play time, ID3 title name (MP3 only)
↓
⑥ Elapsed play time, ID3 artist name (MP3 only)
↓
⑨ Elapsed play time, Original spectrum analyzer display mode

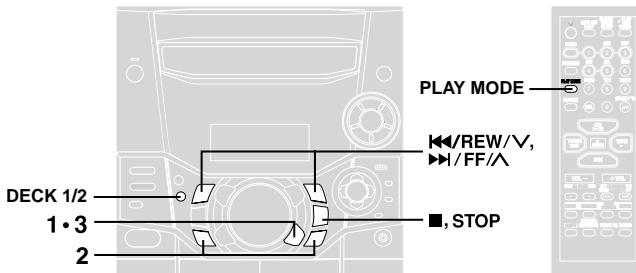
Example:



Note

- When a title is longer than 10 characters, it will scroll across the display. If you selected a mode from ② - ⑥ (see above), the scrolling will start again after every 3 seconds.
- "NO ID3" is displayed if titles with ID3 tags haven't been entered. (MP3 only)
- Maximum number of displayable characters:
Album/track title: 31
ID3 album/title/artist name: 30
(ID3 is a tag embedded in MP3 track to provide information about the track.)
- This unit can display album and track titles with ID3 tags (version 1.0 and 1.1). Titles containing text data that the unit doesn't support cannot be displayed.

Cassettes



You can use either deck 1 or deck 2 for tape playback.

Use normal position tapes.

High position and metal position tapes can be played, but the unit will not be able to do full justice to the characteristics of these tapes.

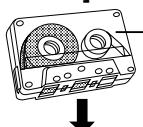
1 Press [▶, TAPE].

The unit comes on.

If a cassette was loaded, play starts automatically (One touch play).

2 Press [▲, DECK 1] or [▲, DECK 2] and insert the cassette.

Insert with the side to be played facing towards you and the exposed tape facing down.
Close the holder by hand.



Front side

3 Press [▶, TAPE] to start playback.

To play on the other side of the tape, turn the tape over and press [▶, TAPE].

To stop tape playback

Press [■, STOP].

To fast-forward or rewind

Press [◀◀/REW/V] (rewind) or [▶▶/FF/A] (fast-forward).

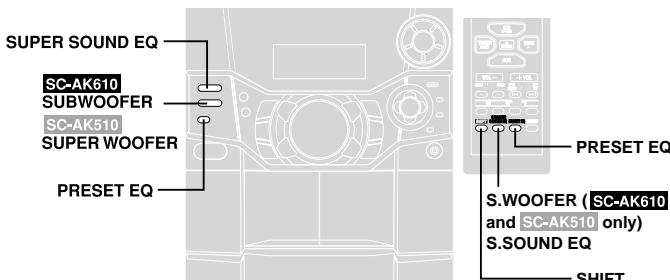
To select between loaded decks

Press [DECK 1/2] (remote control: [PLAY MODE]).

Note

- Tape playback is momentarily interrupted if you open the other deck.
- Tapes exceeding 100 minutes are thin and can break or get caught in the mechanism.
- Tape slack can get caught up in the mechanism and should be taken up before the tape is played.
- Endless tapes can get caught up in the deck's moving parts if used incorrectly.

Sound quality/sound field

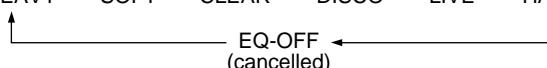


Using the built-in sound quality/sound field settings

Press [PRESET EQ] to select a setting.

Every time you press the button:

HEAVY → SOFT → CLEAR → DISCO → LIVE → HALL



HEAVY (sound quality): Adds punch to rock

SOFT (sound quality): For background music

CLEAR (sound quality): Clarifies higher sounds

DISCO (sound field): Produces sound with the same kind of

lengthy reverberations heard at a disco

LIVE (sound field): Makes vocals more alive

HALL (sound field): Adds an expansiveness to the sound to produce the atmosphere of a great concert hall.

Note

You cannot use PRESET EQ and SUPER SOUND EQ together.

Sound quality/sound field

Enhancing the sound quality

You can enhance the bass and treble effect of the sound.

Press [SUPER SOUND EQ].

Remote control: Press [S.SOUND EQ].

The button light comes on.

Press the button again to cancel.

The button light goes out.

Adjusting the bass (SC-AK610 and SC-AK510 only)

SC-AK610 : Press [SUBWOOFER].

SC-AK510 : Press [SUPER WOOFER].

Remote control: Press [SHIFT] + [S.WOOFER].

The button light comes on.

Each time you press the button:

MID (medium) → MAX (high) → Light off (off)

To cancel

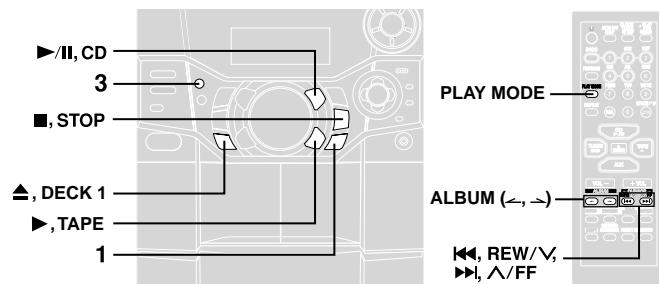
Press [SUBWOOFER] (SC-AK510: [SUPER WOOFER]) to turn the light off.

Remote control: Press [SHIFT] + [S.WOOFER].

Note

You cannot use this function when headphones are connected.

Recording



Selection of tapes for recording

Use normal position tapes.

High position and metal position tapes can be used, but this unit will not be able to record or erase them correctly.

Preparation:

Wind up the leader tape so recording can begin immediately.

1 Press [▲, DECK 2] and insert the cassette to be recorded.

Insert with the side to be recorded facing towards you and the exposed tape facing down.

2 Select the source to be recorded.

Radio recording:

Tune in the station. (→ page 7)

CD recording:

① Insert the CD(s) you want to record.

Press [▶/II, CD] and then [■, STOP].

② Prepare the desired CD recording mode.

Remote control only

• To record programmed tracks (→ do steps 1–3 on page 9 for CD-DA or steps 1–4 on page 11 for MP3/WMA).

• To record specific CDs/tracks

1. For CD-DA, do steps 1 to 2 on page 9: "To listen to specific CDs and tracks (CD Play Mode function)".
For MP3/WMA, do steps 1 to 2 on page 10: "CD Play Mode function for MP3/WMA".

Ensure CD is stopped.

2. For 1-ALBUM mode (MP3/WMA only) and 1-SONG mode: Press [ALBUM (← or →)] to select the album.

3. For 1-SONG mode: Press [◀◀, REW/V] or [▶▶, FF] to select the track.

(WMA: SC-AK610 and SC-AK510 only)

Tape-to-tape recording:

① Press [▶, TAPE] and then [■, STOP].

② Press [▲, DECK 1] and insert the cassette you want to record.

3 Press [● REC] to start recording.

Recording

To stop recording
Press [■, STOP].

If the tape finishes before the CD
The CD continues playing. Press [■, STOP] to stop it.

To record on the other side of the tape
Turn the tape over and press [● REC].

Reducing noise when recording AM

Remote control only

Hold down [PLAY MODE] while recording.

Every time you hold down the button: BP1 ↔ BP2

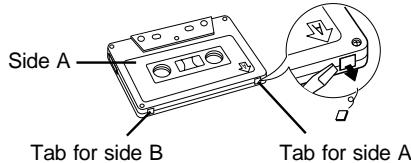
Choose the setting with the least noise.

Note

- Changes to volume and sound/field quality do not affect recording.
- You cannot open deck 1 while recording.
- You cannot fast-forward or rewind one deck while recording with the other.
- When recording an AM broadcast, sound is momentarily interrupted when you start and stop the recording.

Erasure prevention

Use a screwdriver or similar object to break out the tab.



To re-record on a protected cassette

Cover the hole with adhesive tape.



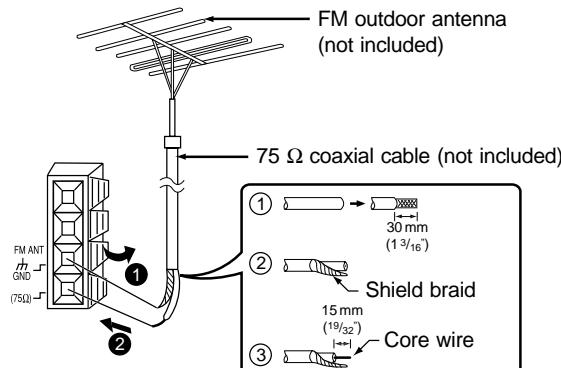
To erase a tape

1. Press [▶, TAPE] and then [■, STOP].
2. Insert the recorded tape into deck 2.
Ensure there is no tape in deck 1.
3. Press [● REC].

Optional antenna connections

Use outdoor antenna if radio reception is poor.

FM outdoor antenna

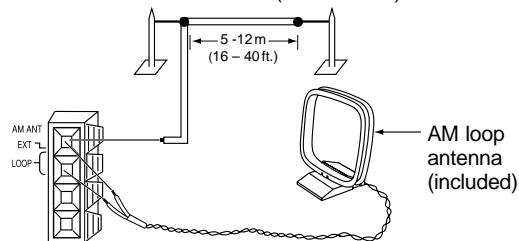


- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.

Optional antenna connections

AM outdoor antenna

AM outdoor antenna (not included)

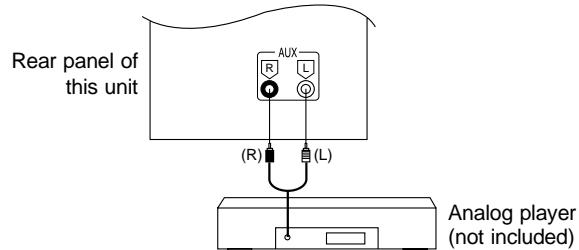


Run a piece of vinyl wire horizontally across a window or other convenient location.
Leave the loop antenna connected.

Note

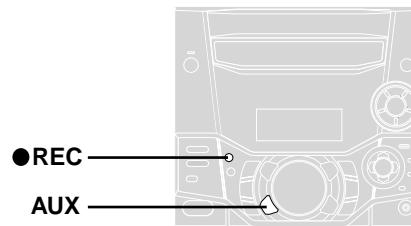
Disconnect the outdoor antenna when the unit is not in use.
Do not use the outdoor antenna during an electrical storm.

External unit connections



- An analog player with a built-in phono equalizer can be connected.
- For details, refer to the instruction manual of the units which are to be connected.
- When units other than those described above are to be connected, please consult your audio dealer.

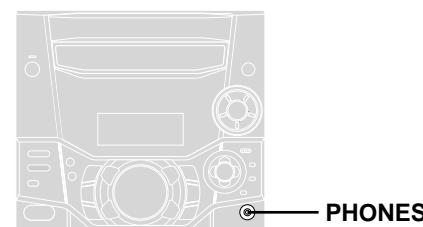
Using an external unit



(See above for external unit connection.)

1. Press [AUX].
The unit comes on.
2. **For listening:** Proceed to step 3.
For recording: Press [● REC] (recording starts).
3. Start playback from the external source. (For details, refer to the external unit's instruction manual.)

Using headphones (not included)

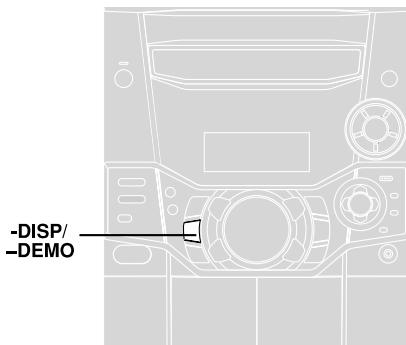


Reduce the volume level and connect the headphones.
Plug type: 3.5 mm (1/8") stereo

Note

Avoid listening for prolonged periods of time to prevent hearing damage.

Turning the demo function off



A demonstration of the display is shown if you have not set the clock. You can reduce the power consumed in standby mode by turning it off.

Hold down [-DISP/-DEMO] until "NO DEMO" is displayed.

Every time you hold down the button:
NO DEMO (off) ↔ DEMO ON (on)

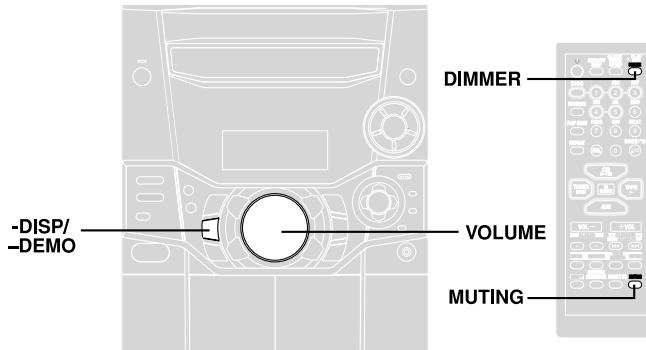
To show a demonstration of the display

Hold down [-DISP/-DEMO] until "DEMO ON" is displayed.

Note

DEMO function cannot be turned on when Dimmer is on.

Convenient functions



To dim the display panel

Remote control only

Press [DIMMER].

The display is dimmed and the indicators are turned off.
(The AC supply indicator remains on.)

Press [DIMMER] again to restore the display.

Switching displays

Press [-DISP/-DEMO] to select the desired spectrum analyzer.

Every time you press the button:

Normal → Peak hold → Aurora → Reflection
↑
(OFF) ← Animation 2 ← Animation 1
("Race") ("Drive")

To mute the volume

Remote control only

Press [MUTING].

Press the button again to cancel.

"MUTING" goes out.

To cancel from the unit, turn [VOLUME] to minimum (-dB), then raise it to the required level.

Muting is also cancelled when the unit is turned off.

Auto-off function

Remote control only

AUTO OFF

SHIFT



When CD or tape is selected as the source

To save power, the unit turns off if it is left unused for ten minutes. This function does not work if the source is tuner or AUX.

Press [SHIFT] + [AUTO OFF].

"AUTO OFF" is shown on the display.

The setting is maintained even if the unit is turned off.

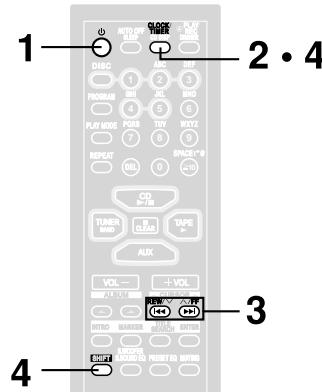
If you select tuner or AUX as the source, "AUTO OFF" goes out. It comes on again when you select CD or tape.

To cancel

Press [SHIFT] + [AUTO OFF] again.

Setting the time

Remote control only



This is a 12-hour clock.

1 Switch on the power.

2 Press [SHIFT] + [CLOCK/TIMER] to select "CLOCK".

Every time you press the button:

CLOCK → ⓁPLAY → ⓁREC

↑ Previous display ↓

3 (within 7 seconds or so)

Press [◀◀, REW/V'] or [▶▶, ▲/FF] to set the time.

4 Press [SHIFT] + [CLOCK/TIMER] to finish setting the time.

The display will return to whatever was displayed before you set the time.

To display the time

Press [SHIFT] + [CLOCK/TIMER] once when the unit is on or at standby mode.

The time is shown for about 5 seconds.

Note

Reset the clock regularly to maintain accuracy.

Troubleshooting guide

Before requesting service, make the below checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem:

In the U.S.A., contact the Panasonic Customer Call Center at 1-800-211-7262, or e-mail consumerproducts@panasonic.com, or web site (<http://www.panasonic.com>).

In Canada, contact Panasonic Canada Inc. Customer Care Centre at 905-624-5505, web site (www.panasonic.ca), or an authorized Servicentre closest to you.

Reference pages are shown as black circled numbers ①.

Common Problems

No sound. Sound stops.	Turn the volume up. Switch off the unit, determine and correct the cause, then switch the unit on. Causes include shorting of the positive and negative speaker wires, straining of the speakers through excessive volume or power, and using the unit in a hot environment.
Sound is unfixed, reversed or comes from one speaker only.	Check the speaker connections. ⑤
Humming heard during play.	An AC power supply cord or fluorescent light is near the cables. Keep other appliances and cords away from this unit's cables.
"ERROR" is displayed.	Incorrect operation performed. Read the instructions and try again.
"— :—" appears on the display at standby mode.	You plugged the AC power supply cord in for the first time or there was a power failure recently. Set the time. ⑯
"F61" is displayed.	Check and correct the speaker cords connection. ⑤ If this does not fix the problem, there is a power supply problem. Consult the dealer.

Listening to the radio

Noise is heard. The stereo indicator flickers or doesn't light. Sound is distorted.	Use an outdoor antenna. ⑯
A beat sound is heard.	Turn the TV off or separate it from the unit.
A low hum is heard during AM broadcasts.	Separate the antenna from other cables and cords.

When there is a television set nearby

The picture on the TV disappears or stripes appear on the screen.	The location and orientation of the antenna are incorrect. If you are using an indoor antenna, change to an outdoor antenna. The TV antenna wire is too close to the unit. Separate the antenna wire of the TV set from the unit.
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Using the cassette deck

Poor quality sound.	Clean the heads. See below
Recording is not possible.	If the erasure prevention tabs have been removed, cover the holes with adhesive tape. ⑯

Playing discs

The display is wrong or play won't start.	The disc may be upside down. ⑧ Wipe the disc. Replace the disc if it is scratched, warped, or non-standard. Condensation may have formed inside the unit due to a sudden change in temperature. Wait about an hour for it to clear and try again.
The total number of tracks displayed differs each time the same disc is inserted. Unusual sound is heard.	The disc may be scratched, or its data may be defective. Replace the disc.
CD-RW cannot be read.	The disc was incompletely formatted. Use the recording equipment to fully format the disc before recording.
"VBR—" is displayed instead of the remaining play time.	The unit cannot display the remaining play time for variable bit rate (VBR) tracks.
"TAKE OUT/DISC" appears on the display.	There is a problem with the disc mechanism. (A power failure may have occurred.) The tray will open automatically. Remove the disc from the tray, and after ensuring there is no disc in the tray, close it. The unit will make the disc changing noises for a few moments and then it should operate normally.

Remote control

Remote control doesn't work.	Check that the batteries are inserted correctly. ④ Replace the batteries if they are worn.
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Maintenance

If the surfaces are dirty

To clean this unit, wipe with a soft, damp cloth.

- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using a chemically treated cloth, read the instructions that came with the cloth carefully.

For a cleaner, crisper sound

Clean the heads regularly to assure good quality playback and recording.

Use a cleaning tape (not included).

Specifications

AMPLIFIER SECTION SC-AK610

Power output	
THD 10%, both channels driven	
55 Hz–120 Hz (Low channel)	65 W per channel (6Ω)
120 Hz–4 kHz (Mid channel)	30 W per channel (6Ω)
4 kHz–16 kHz (High channel)	30 W per channel (6Ω)
40 Hz–100 Hz (Subwoofer channel)	120 W (6Ω)
Total power	370 W

Power output

THD 10%, both channels driven	
100 Hz (Low channel)	75 W per channel (12Ω)
1 kHz (Mid channel)	40 W per channel (6Ω)
10 kHz (High channel)	40 W per channel (6Ω)
80 Hz (Subwoofer channel)	150 W (6Ω)
Total power	460 W

Input sensitivity

AUX	250 mV
Input Impedance	13.3 kΩ

AMPLIFIER SECTION SC-AK510

Power output	
THD 10%, both channels driven	
55 Hz–120 Hz (Low channel)	50 W per channel (6Ω)
120 Hz–4 kHz (Mid channel)	50 W per channel (6Ω)
4 kHz–16 kHz (High channel)	50 W per channel (6Ω)
Total Tri-Amp power	150 W per channel

Power output

THD 10%, both channels driven	
100 Hz (Low channel)	60 W per channel (6Ω)
1 kHz (Mid channel)	60 W per channel (6Ω)
10 kHz (High channel)	60 W per channel (6Ω)
Total Tri-Amp power	180 W per channel

Input sensitivity

AUX	250 mV
Input Impedance	13.3 kΩ

AMPLIFIER SECTION SC-AK410

Power output	
THD 10%, both channels driven	
60 Hz–3 kHz (Low channel)	58 W per channel (6Ω)
3 kHz–16 kHz (High channel)	58 W per channel (6Ω)
Total Bi-Amp power	116 W per channel

Power output

THD 10%, both channels driven	
1 kHz (Low channel)	75 W per channel (6Ω)
10 kHz (High channel)	75 W per channel (6Ω)
Total Bi-Amp power	150 W per channel

Input sensitivity

AUX	250 mV
Input Impedance	13.3 kΩ

AMPLIFIER SECTION SC-AK403

Power output	
THD 10%, both channels driven	
60 Hz–3 kHz (Low channel)	50 W per channel (6Ω)
3 kHz–16 kHz (High channel)	50 W per channel (6Ω)
Total Bi-Amp power	100 W per channel

Power output

THD 10%, both channels driven	
1 kHz (Low channel)	65 W per channel (6Ω)
10 kHz (High channel)	65 W per channel (6Ω)
Total Bi-Amp power	130 W per channel

Input sensitivity

AUX	250 mV
Input Impedance	13.3 kΩ

FM TUNER SECTION

Frequency range	87.9–107.9 MHz (200 kHz steps)
	87.5–108.0 MHz (100 kHz steps)
Sensitivity	2.5 µV (IHF)
S/N 26 dB	2.2 µV
Antenna terminal(s)	75 Ω (unbalanced)

AM TUNER SECTION

Frequency range	520–1710 kHz (10 kHz steps)
Sensitivity	560 µV/m

CASSETTE DECK SECTION

Track system	4 track, 2 channel
Heads	
Record/playback	Solid permalloy head
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erasing system	AC erase 100 kHz
Tape speed	4.8 cm/s (1 7/8 ips)
Overall frequency response	(+3 dB, -6 dB at DECK OUT)
NORMAL (TYPE I)	35 Hz–14 kHz
S/N	50 dB (A weighted)
Wow and flutter	0.18% (WRMS)
Fast forward and rewind time	Approx. 120 seconds with C-60 cassette tape

CD SECTION

Sampling frequency	44.1 kHz
Decoding	16 bit linear

Beam source/wavelength

Semiconductor laser/780 nm

Number of channels

Stereo

Frequency response

20 Hz–20 kHz (+1, -2 dB)

Wow and flutter

Below measurable limit

Digital filter

8 fs

D/A converter

MASH (1 bit DAC)

MP3

Bit rate 32 kbps–320 kbps

Sampling frequency

32 kHz, 44.1 kHz, 48 kHz

WMA (SC-AK610 and SC-AK510 only)

Sampling frequency

32 kHz, 44.1 kHz, 48 kHz

SPEAKER SECTION

Front speakers SB-AK610

Type 3 way, 3 speaker system

Speaker(s)

Super woofer 16 cm (6 1/2") cone type

Woofer 12 cm (4 3/4") cone type

Tweeter 6 cm (2 3/8") cone type

Impedance

HIGH 6 Ω

MID 6 Ω

LOW 12 Ω

Input power

HIGH 130 W (Music)

MID 130 W (Music)

LOW 150 W (Music)

Output sound pressure level

83 dB/W (1.0 m)

Cross over frequency

120 Hz, 5 kHz

Frequency range

35 Hz–25 kHz (~16 dB)

45 Hz–24 kHz (~10 dB)

Dimensions (WxHxD)

237 x 376 x 293 mm

(9 11/32" x 14 13/16" x 11 17/32")

Mass 4.3 kg (9.5 lb.)

Front speakers SB-AK510

Type 3 way, 3 speaker system

Speaker(s)

Woofer 16 cm (6 1/2") cone type

Tweeter 6 cm (2 3/8") cone type

Super tweeter 2.5 cm (1") Piezo type

Impedance

HIGH 6 Ω

LOW 6 Ω

Input power

HIGH 150 W (Music)

LOW 150 W (Music)

Output sound pressure level

86.5 dB/W (1.0 m)

Cross over frequency

3.5 kHz, 10 kHz

Frequency range

35 Hz–25 kHz (~16 dB)

47 Hz–24 kHz (~10 dB)

Dimensions (WxHxD)

227 x 344 x 250 mm

(8 15/16" x 13 17/32" x 9 27/32")

Mass 3.4 kg (7.5 lb.)

Subwoofer SB-WAK610 (SC-AK610 only)

Type 1 way, 2 speaker system

Speaker(s)

Subwoofer 16 cm (6 1/2") cone type

Impedance 6 Ω

Input power

HIGH 300 W (Music)

Output sound pressure level

82 dB/W (1.0 m)

Frequency range

22 Hz–6.8 kHz (~16 dB)

58 Hz–4 kHz (~10 dB)

Dimensions (WxHxD)

230 x 372 x 329 mm

(9 1/16" x 14 21/32" x 12 15/16")

Mass 5.4 kg (11.9 lb.)

GENERAL

Power supply

AC 120 V, 60 Hz

Power consumption

SC-AK610 : 244 W

SC-AK510 : 262 W

SC-AK410 : 225 W

SC-AK403 : 225 W

Dimensions (WxHxD)

250 x 330 x 370 mm

(9 27/32" x 13" x 14 3/8")

Mass

SA-AK610 / SA-AK510 : 8.2 kg (18.0 lb.)

SA-AK410 / SA-AK403 : 7.8 kg (17.2 lb.)

Power consumption in standby mode: 0.34 W

Note:

1. Specifications are subject to change without notice.

Mass and dimensions are approximate.

2. Total harmonic distortion is measured by the digital spectrum analyzer.

3. SB-AK610 SB-AK510

The labels "HIGH", "MID" and "LOW" on the rear of the front speakers refer to

High frequency, Mid frequency and Low frequency.

SB-AK410

The labels "HIGH" and "LOW" on the rear of the speakers refer to High frequency

and Low frequency.

Limited Warranty (ONLY FOR U.S.A.)

Panasonic Consumer Electronics Company
Division of Matsushita Electric Corporation of America
One Panasonic Way Secaucus, New Jersey 07094

Panasonic Sales Company, Division of Matsushita Electric
of Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park, Carolina, Puerto Rico 00985

Panasonic/Technics Audio Products Limited Warranty

Limited Warranty Coverage

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

Product or Part Name	Parts	Labor
Audio Products (except items listed below)	One (1) year	One (1) year
All Audio Racks (cabinets)	Thirty (30) days	Not Applicable
Technics Stand Alone Speakers, Subwoofer Speakers	Three (3) years	Three (3) years
USB Reader-Writer, Personal Computer Card Adapters (in exchange for defective item)	One (1) year	Not Applicable
Accessories: Headphones, Cartridges, Microphones, Adapters	Ninety (90) days	Ninety (90) days
Rechargeable Batteries (in exchange for defective item)	Ten (10) days	Not Applicable
SD Memory Cards, Rechargeable Battery Packs (in exchange for defective item)	Ninety (90) days	Not Applicable

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry-in or mail-in your product during the warranty period. If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

Carry-In or Mail-In Service

For Carry-In or Mail-In Service in the United States call 1-800-211-PANA (1-800-211-7262) or visit Panasonic web site: <http://www.panasonic.com>
For assistance in Puerto Rico call Panasonic Sales Company (787)-750-4300 or fax (787)-768-2910.

Limited Warranty Limits And Exclusions

This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, travel to and from the servicer, loss of media or images, data or other memory content. The items listed are not exclusive, but are for illustration only.) **ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.

Customer Services Directory (ONLY FOR U.S.A.)

For Product Information, Operating Assistance, Literature Request, Dealer Locations, and all Customer Service inquiries please contact:

**1-800-211-PANA (7262), Monday–Friday 9 am–9 pm; Saturday–Sunday 9 am–7 pm, EST.
or send e-mail:**

consumerproducts@panasonic.com

For hearing or speech impaired TTY users, TTY: 1-877-833-8855

Web Site: <http://www.panasonic.com>
You can purchase parts, accessories or locate your nearest servicenter by visiting our Web Site.

Accessory Purchases:

1-800-332-5368 (Customer Orders Only)

For hearing or speech impaired TTY users, TTY: 1-866-605-1277

Panasonic Services Company 20421 84th Avenue South, Kent, WA 98032

(6 am to 5 pm Monday–Friday; 6 am to 10:30 am Saturday; PST)

(Visa, MasterCard, Discover Card, American Express, Check)

Service in Puerto Rico

**Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company/Factory Servicenter:
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985
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(En)